DOCUMENT RESUME

ED 479 773 CS 512 093

TITLE	Thomas Edison's Inventions in the 1900s and Today: From "New" to You! [Lesson Plan].
SPONS AGENCY	Council of the Great City Schools, Washington, DC.; MCI WorldCom, Arlington, VA.; National Endowment for the Humanities (NFAH), Washington, DC.
PUB DATE	2002-07-05
NOTE	10p.
AVAILABLE FROM	For full text: http://edsitement.neh.gov/lesson_index.asp.
PUB TYPE	Guides - Classroom - Teacher (052)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	Class Activities; Curriculum Enrichment; Intermediate Grades; *Inventions; Learning Activities; Lesson Plans; Skill Development; Standards; Student Educational Objectives; *Technological Advancement; *United States History
IDENTIFIERS	*Edison (Thomas); Standards for the English Language Arts

ABSTRACT

The purpose of this lesson is to familiarize students with life and technology around 1900 so that they can better understand how Thomas Edison and his many inventions influenced both. Without some understanding of Edison's time, it is unclear just how significant an impact Edison had on the world, both then and now. While the incandescent light bulb and the phonograph may be familiar, other of Edison's inventions, such as the kinescope, are so strange in name and appearance that students might not make the connection between that machine and today's motion picture industry. The lesson: provides an introduction; poses guiding questions; cites subject areas, time required, and skills developed; gives learning objectives; discusses preparing to teach this lesson; outlines suggested activities (1. Understanding and Identifying Technology Today; 2. Technology in 1900; 3. Thomas Edison's Life and Inventions; 4. Edison in Your Home); suggests activities for extending the lesson; lists selected Web sites; and addresses standards alignment. Attached are a personal technology survey sheet and a technology chart. (NKA)

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Thomas Edison's Inventions in the 1900s and Today: From "New" to You!

NATIONAL ENDOWMENT FOR THE HUMANITIES
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GRADES 3-5

Portrait of Thomas Edison courtesy of the Library of Congress, Prints and Photographs Division, Detroit Publishing Company Collection.

Introduction

Students may find it difficult to study Thomas Edison's inventions because his work seems so far removed from today's technology. While the incandescent light bulb and the phonograph may be familiar, other of Edison's inventions, such as the kinetoscope, are so strange in name and appearance that students might not make the connection between that machine and today's motion picture industry. Without some understanding of Edison's time, it is unclear just how significant an impact Edison had on the world, both then and now.

The purpose of this lesson is to familiarize students with life and technology around 1900 in order to better understand how Edison influenced both. Through comparing and contrasting life and technology in the early part of the twentieth century with technology found in their own homes and experiences, students will gain a greater understanding of how far the fields of industry and entertainment have progressed since Edison's day and of how Edison's work was the foundation for technology they enjoy today.

Guiding Questions:

How was life in 1900s' America different from life in America today? How does the technology we use in our lives today differ from technology in America in the 1900s? What were Thomas Edison's most significant inventions, and how did his inventions improve people's lives in the 1900s? How have Thomas Edison's inventions impacted our lives as well?

Learning Objectives

After completing the lessons in this unit, students will be able to:

- Describe the lifestyles of and the kinds of technology available to both the rich and the poor in 1900s' America
- Compare and contrast their own lifestyles with that of Americans in the 1900s and describe how technology has improved the quality of their lives
- Identify the modern manifestations of 1900 technology predictions and make their own reasonable predictions for the future of technology
- Identify Thomas Edison's major inventions and explain how they were used and how they contributed to the quality of life in the 1900s
- Identify how Thomas Edison's inventions are a basis for modern technology

Subject Areas

History and Social Studies

U.S. History - Other

World History - History of Science

Literature and Language Arts

Biography

Time Required

Lesson 1: One class period
Lesson 2: One class period
Lesson 3: One class period
Lesson 4: One class period

Skills

Working collaboratively
Comparing and contrasting
Gathering, classifying and interpreting written and oral information
Making inferences and drawing conclusions

Additional Data

Date Created: 07/05/02

Preparing to Teach this Lesson

- Extensive information about Thomas Edison's life, companies, patents, etc. is available from the EDSITEment-reviewed website Thomas A. Edison Papers. You may wish to review the page "A

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Shorter Chronology of Edison's Life" on the Edison Papers website to familiarize yourself with Edison's life before introducing the lesson to students.

- Review each lesson in this unit and select the materials you'd like to use in class. If you teach in a laptop classroom, decide which resources you will ask students to view online and which resources you will print out and distribute to students. You might also decide which activities to complete as a whole group, in small groups, in pairs, and individually.
- Give students a copy of the Personal Technology Survey provided in pdf format, and ask them to fill it out at home and bring it to class the next day for Lesson 1. Emphasize that students should try to find as many examples of technology in their homes as possible.

Suggested Activities

1. Understanding and Identifying Technology Today

2. Technology in 1900

3. Thomas Edison's Life and Inventions

4. Edison in Your Home

1. Understanding and Identifying Technology Today

Part One

Write the word "technology" on the board or on a flip chart and ask students how they would define technology. After the group has had a chance to brainstorm definitions of their own, ask several students to look up the definition in print or online dictionaries, such as WWWebster.com, accessed through the EDSITEment-reviewed website Internet Public Library—Youth Division. Discuss the various aspects of the definition, and form one definition on the board for the class to learn and use. Make sure the students understand that technology is the product of scientific research, and that usually those products serve industry, like machines, or people, like computers, stereos and televisions. Technology can also be categorized as products that help people and products that entertain people. It might also help to explain to students that technology is products that use electricity.

Part Two

Ask students to have their Personal Technology Survey in front of them, and ask for volunteers to share the examples of technology found in their homes; put their responses on the board or on a flip chart. As more students read their lists, place checkmarks next to items already named. Ask the group to identify the most common forms of technology in their homes by looking at the number of checkmarks next to each item. Next, ask the students to consider the role each piece of technology plays in their lives. Give each student a copy of the Helpful and Entertaining Technology Chart provided in pdf format, and ask them to categorize up to ten examples of technology in their homes as helpful technology or entertaining technology. You might ask students to complete this exercise in pairs or small groups.

Following this exercise, have the students write a short response to the following question, either alone or in small groups: How does technology affect your life—for instance, in what ways does it make your life easier, more difficult, more fun, more complex, more challenging?

2. Technology in 1900

Segue into the second lesson by explaining that the students are going to learn about what life and technology were like over one hundred years ago in America. You might begin by asking students to brainstorm, in small groups or as a whole group, what they think life and technology were like in the early 1900s. Write student responses on the board or on a flip chart. This activity would also be fun in

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small groups!

> **If you teach in a laptop school, students can complete the next part of the lesson online using An Interview with Max Morath, from the website The American Experience—WayBack U.S. History for Kids - Technology in 1900, accessed through the EDSITEment-reviewed website The Internet Public Library-Youth Division.

If not, you can download, print, and hand out copies of the paraphrased interview, provided in pdf format. If using the website, tell the students to omit questions 8, 9, 10, 11, and 13.

After the students have had time to read through the interview, you might want to discuss the interview with them. You could also compare the facts of the interview with the students' predictions about what technology was like in the 1900s. Finally, have students write a short essay comparing and contrasting life in early 1900s' America with their lives in America today. You might have them choose three or four of the questions from the interview and answer those questions from their own point of view.

> **Example: In 1900, most kids were dying to get their hands on a phonograph. The quality and the variety of the music the phonograph could play were not very good, though. Today, most kids want to play their music on a CD player, which has better sound. Today there are also more types of music to choose from—like country, pop, and classical. Most children today probably wouldn't choose to listen to opera, as some children did in the 1900s. Others might want an MP3 player to play music. An MP3 player doesn't use discs at all.

3. Thomas Edison's Life and Inventions

Segue into this lesson by explaining to students that the man responsible for most of the inventions talked about in the Max Morath interview is Thomas Alva Edison, and that they are going to learn about his life and his inventions.

An accessible biography of Edison's life is available at "The Life of Thomas Edison" on Inventors at About.com, accessed through the EDSITEment-reviewed website The Internet Public Library—Youth Division.

Students should read through the selection and answer the following questions for comprehension:

- When was Edison born?
- Describe what Edison's education was like. Do you think this sort of education was common in the late 1800s? How does Edison's education contrast with your education?
- At what age did Edison begin working? At what age did he strike out on his own? Why do you think so many boys left home at young ages to work in Edison's time?
- How did Edison spend his free time?
- What opportunities did Edison have as a telegraph operator?
- What was Edison's first successful invention?
- What two important events happened for Edison in 1871?
- What was Menlo Park?
- Edison's second major invention was the tin foil phonograph. What did it do?
- What contributions did Edison make to the electric lighting industry?

After students have completed the reading assignment, review the three inventions introduced in the article—the stock ticker, the tin foil phonograph and the incandescent light—and ask students to categorize them as technology that helps people or technology that entertains people by writing each invention's name in a space under "Product" on their charts from lesson 1.

Next, look at a second page devoted to Thomas Edison's inventions at "The Inventions of Thomas Edison" on Inventors at About.com, accessed through the EDSITEment-reviewed website The Internet Public Library—Youth Division. The material on these pages can be somewhat dense, so you may want to download, print, and hand out to students the condensed, paraphrased version, "A Survey of Thomas Edison's Inventions" with the name of the inventions followed by a short description of their workings.

You might also break students into groups and assign each group a specific invention to read about and report on. After students have read and discussed each invention briefly, ask them to categorize each invention as technology that helps people or as technology that entertains people, using their charts.

4. Edison in Your Home

> **Before completing this lesson in class, have students take their personal technology surveys home again, and this time have them make a list of all the items in their homes that are modern versions of Edison inventions, such as lights, CD players, DVD players, camcorders, etc.

Ask the class for examples of modern versions of Edison's inventions in their homes. Write student responses on the board or on a flip chart. Individually, ask students to write a short response to the following questions:

- How do you think Thomas Edison improved the quality of people's lives in the 1900s through technology?
- How have Thomas Edison's inventions improved the quality of your life today?

Share responses as a group to review the lesson.

Individually or in small groups, have students draw or use images from the internet and magazines to create colorful pictorial timelines of the evolution of Edison's inventions. Pictures of Edison's inventions can be found on all the pages referenced in this lesson.

> **Example: Edison cylinder phonograph » Edison disc phonograph » record player » CD player.

Extending the Lesson

- Have students look at the predictions made about technology in the year 2000 by people in 1900 on "What in the world will the future bring?" on the website The American Experience—Wayback U.S. History for Kids—Technology in 1900 accessed through the EDSITEment reviewed website The Internet Public Library-Youth Division. How many of their predictions came true, more or less, and what are the present-day manifestations of those predictions? Ask students to make predictions about what technology will be like in another one hundred years, in the year 2100. You might have the students make pictorial charts or collages in which they include picture of technology in 1900, today, and drawings of their predictions for the future.
- Students might also enjoy looking at other popular inventions of the 1900s—such as blue jeans and Coca-Cola. Online, or using handouts, have students review Inventors and Inventions 1851-1900 and 1901-1950 on the website EnchantedLearning.com, accessed through the EDSITEment reviewed website The Internet Public Library-Youth Division. Ask students to make a list of all the inventions created in the period from 1851-1950 that we use almost every day.
- Create a visual matching quiz by downloading and copying pictures of Edison's inventions into one column with names and descriptions of the inventions in the second column. This assignment would work best as an online quiz, as the quality of the pictures when printed and copied may be too poor for students to distinguish between them.

Selected EDSITEment Websites

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- The Internet Public Library—Youth Division [http://www.ipl.org/div/youthres]
  - Inventors at About.com [http://www.inventors.about.com]
  - "The Inventions of Thomas Edison" [http://inventors.about.com/library/inventors/bledison.htm]
  - "The Life of Thomas Edison" [http://inventors.about.com/library/inventors/bledisonbiography.htm]
  - EnchantedLearning.com [http://www.zoomschool.com/Home.shtml]
  - Inventors and Inventions 1851-1900 [http://www.zoomschool.com/inventors/1800b.shtml]
  - 1901-1950 [http://www.zoomschool.com/inventors/1900a.shtml]
  - The American Experience—Wayback U.S. History for Kids—Technology in 1900 [http://www.pbs.org/wgbh/amex/kids/tech1900]
  - An Interview with Max Morath [http://www.pbs.org/wgbh/amex/kids/tech1900/buzz/buzznoframes.html]
  - "What in the world will the future bring?" [http://www.pbs.org/wgbh/amex/kids/tech1900/snapshot.html]
  - WWWebster.com [http://www.m-w.com/netdict.htm]
- Thomas A. Edison Papers [http://edison.rutgers.edu]
  - "A Shorter Chronology of Edison's Life" [http://edison.rutgers.edu/brfchron.htm]

Other Information

Standards Alignment

1. NCSS-2

   Time, continuity, and change. The ways human beings view themselves in and over time. more

2. NCSS-3

   People, places, and environments. more

3. NCTE/IRA-1

   Students read a wide range of print and nonprint texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world, to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works. more

4. NCTE/IRA-11

   Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy communities.

5. NCTE/IRA-12

   Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information). more

6. NCTE/IRA-3

Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes. more

7. NCTE/IRA-5

   Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes. more

8. NCTE/IRA-6

   Students apply knowledge of language structure, language conventions (e.g., spelling and punctuation), media techniques, figurative language, and genre to create, critique, and discuss print and nonprint texts. more

9. NCTE/IRA-8

   Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge. more

http://edsitement.neh.gov

Personal Technology Survey

ROOM IN YOUR HOME	TECHNOLOGY FOUND THERE (appliances, machines – anything that helps you complete a task or activity or that uses electricity)
KITCHEN	
LIVING ROOM OR FAMILY ROOM	
YOUR BEDROOM	
BATHROOM	
GARAGE OR BASEMENT	
OTHER ROOMS	
TOTAL NUMBER OF APPLIANCES YOU COUNTED	

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Helpful and Entertaining Technology Chart

PRODUCT	HELPFUL TECHNOLOGY	ENTERTAINING TECHNOLOGY

http://edsitement.neh.gov/view_lesson_plan.asp?id=408
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